

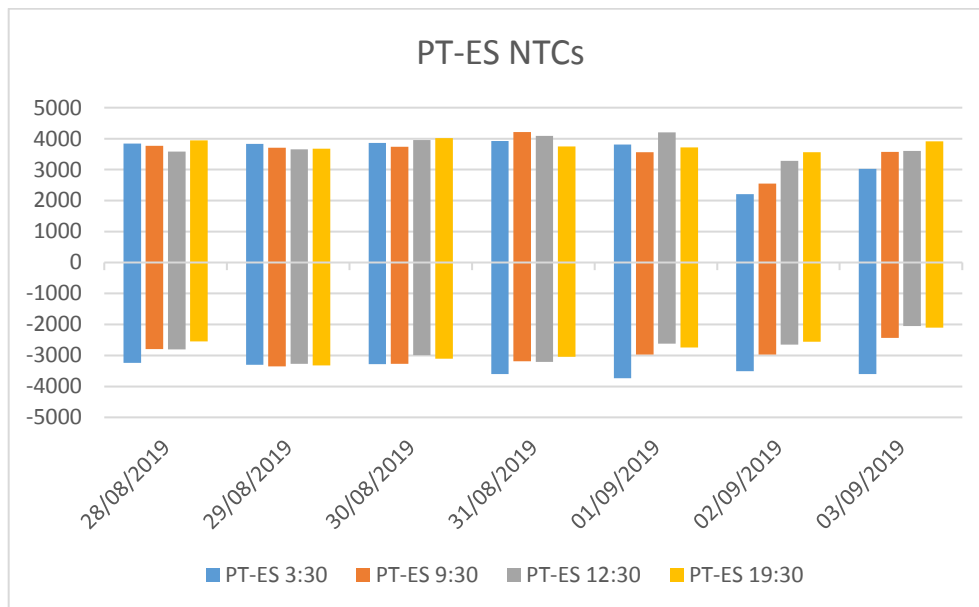
SWE Capacity Calculation report for Stakeholders

The elements in this report are based on ongoing experimentation with continuous tool improvement. The values/limiting elements can still evolve a bit until Go-Live.

This document reports results of the external parallel run from the 28/08/2019 to the 3/09/2019.

PT-ES NTCs

	NTC PT-ES															
	3:30				9:30				12:30				19:30			
	ES>PT		PT>ES		ES>PT		PT>ES		ES>PT		PT>ES		ES>PT		PT>ES	
	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly
03/09/2019	3027	3000	3600	2800	3573	2300	2437	2600	3600	2300	2054	2600	3915	2300	2103	2600
02/09/2019	2205	3000	3510	3000	2544	2300	2970	2600	3284	2300	2649	2600	3564	2300	2562	2600
01/09/2019	3806	3000	3735	3000	3563	3000	2970	3000	4201	3000	2618	3000	3713	4100	2747	2800
31/08/2019	3926	3000	3600	3000	4209	4100	3188	2800	4090	4100	3206	2800	3742	4100	3048	2800
30/08/2019	3865	2900	3285	3000	3741	3750	3272	3000	3958	3750	2991	3000	4017	3750	3107	3000
29/08/2019	3830	2900	3300	3000	3704	3750	3359	3000	3653	3750	3267	3000	3680	3750	3319	3000
28/08/2019	3843	2900	3237	3000	3770	3750	2796	3000	3584	3750	2811	3000	3943	3750	2548	3000



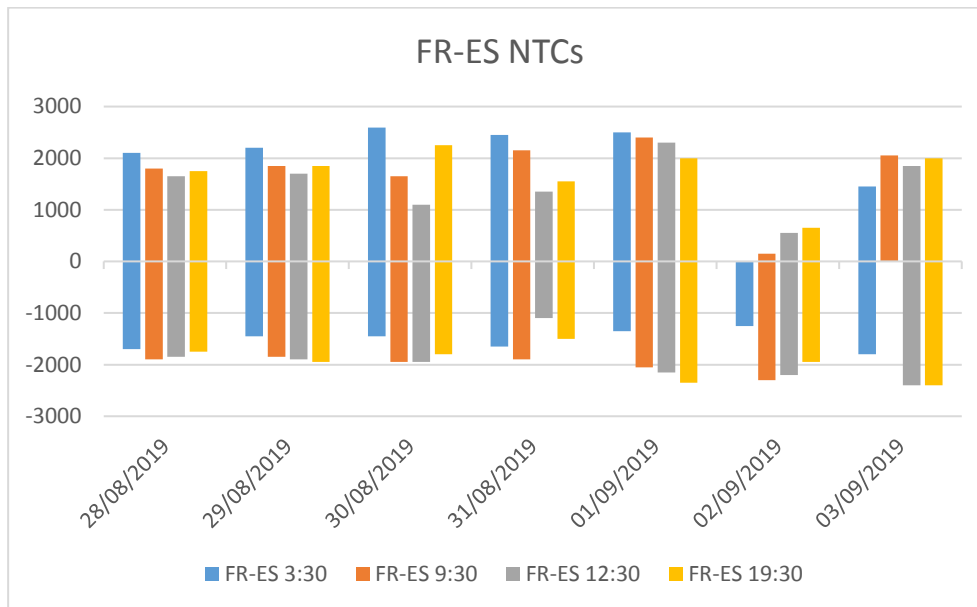
Comments:

No computation failed for the PT-ES border over this seventh week of External parallel run with generally good results. Please note that not all the hours have been validated by TSOs at this moment.

Please keep in mind that today only one voltage angle is monitored during the computation. Multiple voltage angle monitoring should be tackled before Go-Live.

FR-ES NTCs

	NTC FR-ES															
	3:30				9:30				12:30				19:30			
	ES>FR		FR>ES		ES>FR		FR>ES		ES>FR		FR>ES		ES>FR		FR>ES	
	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly
03/09/2019	1450	2400	1800	2400	2050	1650	N/A	2400	1850	1650	2400	2400	2000	1650	2400	2400
02/09/2019	N/A	2400	1250	2400	150	1650	2300	2400	550	1650	2200	2400	650	1650	1950	2400
01/09/2019	2500	2400	1350	2400	2400	2400	2050	2400	2300	2400	2150	2400	2000	1650	2350	2400
31/08/2019	2450	2400	1650	2400	2150	1650	1900	2400	1350	1650	1100	2400	1550	1650	1500	2400
30/08/2019	2590	2400	1450	1350	1650	1950	1950	1850	1100	1950	1950	1650	2250	1950	1800	1850
29/08/2019	2200	2400	1450	1350	1850	1800	1850	1700	1700	1800	1900	1700	1850	1800	1950	1700
28/08/2019	2100	2450	1700	1350	1800	1800	1900	1700	1650	1800	1850	1700	1750	1800	1750	1700



Comments:

Only two computations failed for the FR-ES border over this seventh week of External parallel run with generally good results. Please note that not all the hours have been validated by TSOs at this moment.

For the moment, the voltage is monitored in the computation but cannot limit the capacity. During External parallel run voltage will be monitored through the local validation of results by TSOs even if it is a common task.

Limiting elements PT-ES

Please find below the 5 limiting elements appearing more often over the period for PT->ES direction:

Critical Network Elements and Contingencies PT->ES	Location CNE	Frequency
# 1 L-400 kV Interconnector	ES-PT	85.7%
N-2 Interconnector 400 kV (ES-PT)		85.7%
# 2 L-400 kV	PT	7.1%
N-2 Interconnector 400 kV (ES-PT)		7.1%
# 3 L-400 kV	ES	3.6%
N-2 400 kV (ES)		3.6%
# 4 L-220 kV	ES	3.6%
N-2 400 kV (ES)		3.6%

Find below the 5 limiting elements appearing more often over the period for ES->PT direction:

Critical Network Elements and Contingencies ES->PT	Location CNE	Frequency
# 1 L-400 kV Interconnector	ES-PT	50.0%
N-2 Interconnector 400 kV (ES-PT)		50.0%
# 2 GLSK limitation	PT	14.3%
N state		14.3%
# 3 L-220 kV Interconnector	ES-PT	14.3%
N-1 Interconnector 220 kV (ES-PT)		10.7%
N-1 Interconnector 220 kV (ES-PT)		3.6%
# 4 Non convergence		10.7%
N-1 400 kV (PT)		7.1%
N-1 Interconnector 400 kV (ES-PT)		3.6%
# 5 Angle difference	PT	3.6%
N-2 Interconnector 400 kV (ES-PT)		3.6%
# 5 L-220 kV	ES-PT	3.6%
N-2 400 kV (ES)		3.6%
# 5 L-220 kV	PT	3.6%
N-1 Interconnector 400 kV (ES-PT)		3.6%

Limiting elements FR-ES

Please find below the 5 limiting elements appearing more often over the period for FR->ES direction:

Critical Network Elements and Contingencies FR->ES	Location CNE	Frequency
# 1 L-400 kV	ES	32.1%
	N-1 400 kV (ES)	28.6%
	N-1 Power Plant (ES)	3.6%
# 2 L-400 kV	FR	32.1%
	N state	32.1%
# 3 L-220 kV	ES	14.3%
	N-1 Power Plant (ES)	14.3%
# 4 L-220 kV	ES	7.1%
	N-1 Power Plant (ES)	3.6%
	N state	3.6%
# 5 Non convergence		3.6%
	N-1 Interconnector 400 kV (ES-FR)	3.6%
# 5 Computation Failed		3.6%
	Computation Failed	3.6%
# 5 L-220 kV Interconnector	ES-FR	3.6%
	N-1 220 kV (ES)	3.6%
# 5 L-220 kV Interconnector	ES-FR	3.6%
	N-1 Power Plant (ES)	3.6%

Find below the 5 limiting elements appearing more often over the period for ES->FR direction:

Critical Network Elements and Contingencies ES->FR	Location CNE	Frequency
# 1 L-220 kV	ES	25.0%
	N-1 400 kV (ES)	25.0%
# 2 L-220 kV Interconnector	ES-FR	21.4%
	N state	14.3%
	N-1 Interconnector 400 kV (ES-FR)	3.6%
	N-1 400 kV (FR)	3.6%
# 3 L-220 kV Interconnector	ES-FR	14.3%
	N-1 400 kV (ES)	7.1%
	N-1 400 kV (FR)	3.6%
	N state	3.6%
# 4 L-220 kV	FR	10.7%
	N state	7.1%
	N-1 400 kV (FR)	3.6%
# 5 L-220 kV	ES	7.1%
	N-2 400 kV (ES)	7.1%
# 5 Computation Failed¹		7.1%
	Computation Failed	7.1%

¹ For one scenario the TTC value is calculated without identifying the associated CNEC (partial failure).